

District I
1625 N French Dr., Hobbs, NM 88240
Phone (575) 393-6161 Fax (575) 393-0720
District II
811 S First St., Artesia, NM 88210
Phone (575) 748-1283 Fax (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax (505) 334-6170
District IV
1220 S St Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax (505) 476-3462

State of New Mexico
Energy Minerals and Natural Resources

Form C-101
Revised August 1, 2011

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Correct Oper.
name & OGRID
Prop. Code Per BH

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

Operator Name and Address LIME ROCK RESOURCES A, L.P. 1111 BAGBY STREET, SUITE 4600, HOUSTON TX 77002		OGRID Number 255333 281994
Property Code 38926 390D3	Property Name ARCO STATE	Well No. 1

7 Surface Location

UL - Lot L	Section 24	Township 17	Range 28	Lot Idn	Feet from 1650	N/S Line S	Feet From 530	E/W Line W	County EDDY
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8 Pool Information

EMPIRE; GLORIETA - YESO

Additional Well Information

9 Work Type N	10 Well Type O	11 Cable/Rotary R	12 Lease Type S	13 Ground Level Elevation 3705
14 Multiple NO	15 Proposed Depth 5377	16 Formation GLORIETA YESO	17 Contractor UNITED	18 Spud Date
Depth to Ground water 300		Distance from nearest fresh water well 2 MILES		Distance to nearest surface water 4 MILES

19 Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
	20"	14"	84#	40	Cmt. ready mix	SURFACE
	12 1/4"	8 5/8"	24#	500	330	SURFACE
	7 7/8"	5 1/2"	17#	5377	975	SURFACE

Casing/Cement Program: Additional Comments

See attached Drilling & Directional plans

Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
XLT 11"	5,000#	2,000#	NATIONAL BARCO

I hereby certify that the information given above is true and complete to the best of my knowledge and belief
I further certify that the drilling pit will be constructed according to NMOCD guidelines ☐, a general permit ☐, or an (attached) alternative OCD-approved plan ☒.

Printed name: BARRY W. HUNT

Title: PERMIT AGENT FOR LIME ROCK RESOURCES A, L.P.

E-mail Address: specialpermitting@gmail.com

Date: 11/11/11

Phone: (575) 361-4078

OIL CONSERVATION DIVISION

Approved By:

Title:

Approved Date:

Expiration Date:

Conditions of Approval Attached

OK

POWER OF ATTORNEY

DESIGNATION OF AGENT

LIME ROCK RESOURCES A, L.P. hereby names the following person as its agent:

Name of Agent: Barry W. Hunt d/b /a/ Special T Permitting

Agent's Address: 1403 Springs Farm Place, Carlsbad, NM 88220

Agent's Telephone Number: (575) 885-1417

GRANT OF SPECIAL AUTHORITY

LIME ROCK RESOURCES A, L.P. grants its agent the authority to act for it with the respect to the following only:

1. Executing forms required to be filed with the Oil Conservation Division of the New Mexico Energy, Minerals, and Natural Resources Department.
2. Executive forms required to be filed with the Bureau of Land Management of the Department of Interior of the United States of America.

EFFECTIVE DATE

This power of attorney is effective immediately.

RELIANCE ON THIS POWER OF ATTORNEY

Any person, including the agent, may rely upon the validity of this power of attorney or a copy of it unless that person knows it has terminated or is invalid.

SIGNATURE AND ACKNOWLEDGEMENT

LIME ROCK RESOURCES A, L.P.

By: [Signature]

Name: Charles Adcock

Title: Managing Director – Lime Rock Resources, G.P.

Date: 09/19/2011

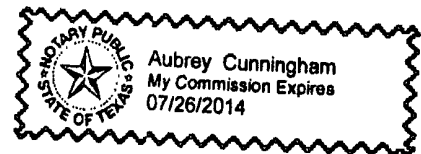
Address: 1111 Bagby Street, Suite 4600, Houston, TX 77002

Telephone Number: (713)292-9512

State of TEXAS
County of HARRIS

This instrument was acknowledged before me on September 19th, 2011 by Charles Adcock,
Managing Director of LIME ROCK RESOURCES A, L.P. acting on behalf of said limited partnership.

Signature of notarial officer: [Signature]
My commission expires: 07-26-2014



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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 36-015-3635	Pool Code 96210	Pool Name Empire; GLorieta - Yeso
Property Code 38926 39003	Property Name ARCO STATE	Well Number 1
GRID No 255333 281994	Operator Name LAE Operating LLC LIME ROCK RESOURCES A.L.P.	Elevation 3705'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	24	17-S	28-E		1650	SOUTH	530	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	24	17-S	28-E		1680	SOUTH	360	WEST	EDDY

Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	CORNER COORDINATES TABLE Ⓐ - Y=662476.4 N, X=560049.7 E Ⓑ - Y=662487.1 N, X=561346.2 E Ⓒ - Y=659807.0 N, X=560025.8 E Ⓓ - Y=659824.3 N, X=561335.4 E	GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=661463.9 N X=560570.6 E LAT.=32.818297° N LONG.=104 136170° W BOTTOM HOLE LOCATION Y=661491.6 N X=560400.8 E	OPERATOR CERTIFICATION I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division <i>Barry W. Hunt</i> 11/11/11 Signature Date Barry W. Hunt Printed Name E-mail Address
	SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief SEPTEMBER 9, 2011 Date of Survey Signature & Seal of Professional Surveyor: <i>Barry G. Eidson</i> Barry G. Eidson Ronald J. Eidson Certificate Number 12641 3239 DSS WSC W O 11.13.2247		

Well Name	ARCO STATE #1	Operator:	Surface Location:	1650	Feet from the	South	530	Feet from the	West
S-T-R & Unit()	S24-T175-R28E (L)	LRR A	BH Location:	1680	feet from the	South	360	Feet from the	West
Well Type	Directional Shallow S		Productive Targets: Empire; Glorieta-Yeso				Frac:	3 stage x-linked get after perfs	
	KOP	575' MD	Target for Vertical	2178' MD	Total Depth	5377' MD			
Geology									
	7 Rivers	Queen	Grayburg	Premier	Sand Andres	Glorieta	Yeso	Tubb	Total Depth
TVD	945	1517	1911	2150	2226	3621	3711	5144	5362
MD	959	1542	1939	2178	2254	3649	3739	5172	5377

Casing Program									
							Design Factors		
Type	Hole Size	Casing Size	Weight	Grade	Thread	Depth	Collapse	Burst	Tension
Conductor	20"	14"	84	8	Weld	40			
Surface	12-1/4"	8-5/8"	24	J-55	ST&C	500			
Intermediate									
Liner									
Production	7-7/8"	5-1/2"	17	J-55	LT&C	5377			

Cement Program						
Casing	Depth	Slurry Vol, sx	Sacks	Density	Yield	System or Slurry Components
8-5/8"	500	1 Slurry	330	14.8	1.35	Cl C Cmt w/ 2% CaCl2 + 1/4#/sk Cello Flake
5-1/2"	5377	Lead	325	12.8	2	35:65:6 Cl C/Poz/gel + 5% salt, 2% Cacl2, 1/4pps cello flake + LCM-1
		Tail	650	14	1.37	50/50 Cl C/Poz w/ 2% CaCl2 and 1/4 pps cello flake

Mud Program				
Depth		0-450	450-4900	4900-5377
Mud Type		Fresh Water	Brine	Brine w/ Gel & Starch
Properties				
	MW	8.5-9.2	9.9-10.2	9.9-10.2
	pH	10	10-11.5	10-11.5
	WL	NC	NC	15-20
	Vis	28-34	30-32	32-34
	MC	NC	NC	1
	Solids	NC	<1%	<1%
Pump Rate		300-350 gpm	350-450 gpm	450-500 GPM
Special		LCM as Req	Salt Gel & MF as Req'd Pmp Hi Vis sweeps to control solids	Salt gel, Acid & MF as req. Pmp Hi Vis sweeps to control solids

LIME ROCK RESOURCES

EDDY COUNTY, NM (FLAT EARTH)

SEC. 24 T. 17S RGE. 28E

ARCO ST #1

ORIGINAL WELLBORE

24 October, 2011

Plan: PROPOSAL #1



Planning Report



Database:	EDM_5000_1_7	Local Co-ordinate Reference:	Well ARCO ST #1
Company:	LIME ROCK RESOURCES	TVD Reference:	KB-EST @ 3716.0usft (Original Well Elev)
Project:	EDDY COUNTY, NM (FLAT EARTH)	MD Reference:	KB-EST @ 3716.0usft (Original Well Elev)
Site:	SEC 24 T. 17S RGE. 28E	North Reference:	True
Well:	ARCO ST #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Project	EDDY COUNTY, NM (FLAT EARTH)		
Map System:	Flat Earth	System Datum:	Mean Sea Level
Geo Datum:	WGS 1984		
Map Zone:	No Conversions		Using geodetic scale factor

Site	SEC. 24 T. 17S RGE. 28E		
Site Position:		Northing:	0.00usft
From:	None	Easting:	0.00usft
Position Uncertainty:	0 0 usft	Slot Radius:	13-3/16"
		Latitude:	0° 0' 0.000 N
		Longitude:	0° 0' 0.000 E
		Grid Convergence:	0.00 °

Well	ARCO ST #1		
Well Position	+N/-S	0.0 usft	Northing: 0.00 usft
	+E/-W	0.0 usft	Easting: 0.00 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	30° 59' 24.512 N
		Longitude:	105° 55' 44.137 W
		Ground Level:	3,704.5 usft

Wellbore	ORIGINAL WELLBORE		
Magnetics	Model Name	Sample Date	Declination
	User Defined	24/10/2011	0.00
			Dip Angle
			0.00
			Field Strength
			0

Design	PROPOSAL #1		
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Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	5,361.5	0.0	0.0
			Direction
			(°)
			278.53

Plan Sections											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0 0	-3,716.0	0.0	0.0	0.00	0.00	0.00	0.00	
575.0	0.00	0.00	575.0	-3,141.0	0.0	0.0	0.00	0.00	0.00	0.00	
945.8	11.12	278.53	943.5	-2,772.5	5.3	-35.5	3.00	3.00	0.00	278.53	
1,436.1	11.12	278.53	1,424.6	-2,291.4	19.4	-129.0	0.00	0.00	0.00	0.00	
2,177.7	0.00	0.00	2,161.5	-1,554.5	30.0	-200.0	1.50	-1.50	0.00	180.00	
5,377.7	0.00	0.00	5,361.5	1,645.5	30.0	-200.0	0.00	0.00	0.00	0 00	PROPOSED TD - A

Planning Report



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Project:	EDDY COUNTY, NM (FLAT EARTH)	MD Reference:	KB-EST @ 3716.0usft (Original Well Elev)
Site:	SEC. 24 T. 17S RGE. 28E	North Reference:	True
Well:	ARCO ST #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	3,716.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	3,616.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	3,516.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	3,416.00	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	3,316.00	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	3,216.00	0.0	0.0	0.0	0.00	0.00	0.00
KOP (3°/100ft BUR)										
575.0	0.00	0.00	575.0	3,141.00	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.75	278.53	600.0	3,116.00	0.0	-0.2	0.2	3.00	3.00	0.00
700.0	3.75	278.53	699.9	3,016.09	0.6	-4.0	4.1	3.00	3.00	0.00
800.0	6.75	278.53	799.5	2,916.52	2.0	-13.1	13.2	3.00	3.00	0.00
900.0	9.75	278.53	898.4	2,817.57	4.1	-27.3	27.6	3.00	3.00	0.00
END OF BUILD TO 11.12° INC										
945.8	11.12	278.53	943.5	2,772.54	5.3	-35.5	35.9	3.00	3.00	0.00
7 RIVERS										
959.1	11.12	278.53	956.5	2,759.50	5.7	-38.0	38.4	0.00	0.00	0.00
1,000.0	11.12	278.53	996.7	2,719.34	6.9	-45.8	46.3	0.00	0.00	0.00
1,100.0	11.12	278.53	1,094.8	2,621.22	9.7	-64.9	65.6	0.00	0.00	0.00
1,200.0	11.12	278.53	1,192.9	2,523.10	12.6	-84.0	84.9	0.00	0.00	0.00
1,300.0	11.12	278.53	1,291.0	2,424.98	15.5	-103.1	104.2	0.00	0.00	0.00
1,400.0	11.12	278.53	1,389.1	2,326.86	18.3	-122.1	123.5	0.00	0.00	0.00
END OF TANGENT										
1,436.1	11.12	278.53	1,424.6	2,291.43	19.4	-129.0	130.5	0.00	0.00	0.00
1,500.0	10.17	278.53	1,487.4	2,228.64	21.1	-140.7	142.3	1.50	-1.50	0.00
QUEEN										
1,541.8	9.54	278.53	1,528.5	2,187.50	22.2	-147.8	149.4	1.50	-1.50	0.00
1,600.0	8.67	278.53	1,586.0	2,129.99	23.5	-156.9	158.6	1.50	-1.50	0.00
1,700.0	7.17	278.53	1,685.1	2,030.94	25.6	-170.5	172.4	1.50	-1.50	0.00
1,800.0	5.67	278.53	1,784.4	1,931.57	27.2	-181.5	183.6	1.50	-1.50	0.00
1,900.0	4.17	278.53	1,884.1	1,831.94	28.5	-190.0	192.1	1.50	-1.50	0.00
GRAYBURG										
1,938.5	3.59	278.53	1,922.5	1,793.50	28.9	-192.6	194.8	1.50	-1.50	0.00
2,000.0	2.67	278.53	1,983.9	1,732.12	29.4	-195.9	198.1	1.50	-1.50	0.00
2,100.0	1.17	278.53	2,083.8	1,632.18	29.9	-199.2	201.4	1.50	-1.50	0.00
END OF DROP TO VERTICAL - PREMIER SAND										
2,177.7	0.00	0.00	2,161.5	1,554.50	30.0	-200.0	202.2	1.50	-1.50	104.87
2,200.0	0.00	0.00	2,183.8	1,532.19	30.0	-200.0	202.2	0.00	0.00	0.00
SAN ANDREAS										
2,253.7	0.00	0.00	2,237.5	1,478.50	30.0	-200.0	202.2	0.00	0.00	0.00
2,300.0	0.00	0.00	2,283.8	1,432.19	30.0	-200.0	202.2	0.00	0.00	0.00
2,400.0	0.00	0.00	2,383.8	1,332.19	30.0	-200.0	202.2	0.00	0.00	0.00
2,500.0	0.00	0.00	2,483.8	1,232.19	30.0	-200.0	202.2	0.00	0.00	0.00
2,600.0	0.00	0.00	2,583.8	1,132.19	30.0	-200.0	202.2	0.00	0.00	0.00
2,700.0	0.00	0.00	2,683.8	1,032.19	30.0	-200.0	202.2	0.00	0.00	0.00
2,800.0	0.00	0.00	2,783.8	932.19	30.0	-200.0	202.2	0.00	0.00	0.00
2,900.0	0.00	0.00	2,883.8	832.19	30.0	-200.0	202.2	0.00	0.00	0.00
3,000.0	0.00	0.00	2,983.8	732.19	30.0	-200.0	202.2	0.00	0.00	0.00
3,100.0	0.00	0.00	3,083.8	632.19	30.0	-200.0	202.2	0.00	0.00	0.00
3,200.0	0.00	0.00	3,183.8	532.19	30.0	-200.0	202.2	0.00	0.00	0.00
3,300.0	0.00	0.00	3,283.8	432.19	30.0	-200.0	202.2	0.00	0.00	0.00
3,400.0	0.00	0.00	3,383.8	332.19	30.0	-200.0	202.2	0.00	0.00	0.00
3,500.0	0.00	0.00	3,483.8	232.19	30.0	-200.0	202.2	0.00	0.00	0.00
3,600.0	0.00	0.00	3,583.8	132.19	30.0	-200.0	202.2	0.00	0.00	0.00

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Design:	PROPOSAL #1		

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MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
GLORIETA										
3,648.7	0.00	0.00	3,632.5	83.50	30.0	-200.0	202.2	0.00	0.00	0.00
3,700.0	0.00	0.00	3,683.8	32.19	30.0	-200.0	202.2	0.00	0.00	0.00
UPPER YESO										
3,738.7	0.00	0.00	3,722.5	-6.50	30.0	-200.0	202.2	0.00	0.00	0.00
3,800.0	0.00	0.00	3,783.8	-67.81	30.0	-200.0	202.2	0.00	0.00	0.00
3,900.0	0.00	0.00	3,883.8	-167.81	30.0	-200.0	202.2	0.00	0.00	0.00
4,000.0	0.00	0.00	3,983.8	-267.81	30.0	-200.0	202.2	0.00	0.00	0.00
4,100.0	0.00	0.00	4,083.8	-367.81	30.0	-200.0	202.2	0.00	0.00	0.00
4,200.0	0.00	0.00	4,183.8	-467.81	30.0	-200.0	202.2	0.00	0.00	0.00
4,300.0	0.00	0.00	4,283.8	-567.81	30.0	-200.0	202.2	0.00	0.00	0.00
4,400.0	0.00	0.00	4,383.8	-667.81	30.0	-200.0	202.2	0.00	0.00	0.00
4,500.0	0.00	0.00	4,483.8	-767.81	30.0	-200.0	202.2	0.00	0.00	0.00
4,600.0	0.00	0.00	4,583.8	-867.81	30.0	-200.0	202.2	0.00	0.00	0.00
4,700.0	0.00	0.00	4,683.8	-967.81	30.0	-200.0	202.2	0.00	0.00	0.00
4,800.0	0.00	0.00	4,783.8	-1,067.81	30.0	-200.0	202.2	0.00	0.00	0.00
4,900.0	0.00	0.00	4,883.8	-1,167.81	30.0	-200.0	202.2	0.00	0.00	0.00
5,000.0	0.00	0.00	4,983.8	-1,267.81	30.0	-200.0	202.2	0.00	0.00	0.00
5,100.0	0.00	0.00	5,083.8	-1,367.81	30.0	-200.0	202.2	0.00	0.00	0.00
TUBB										
5,171.7	0.00	0.00	5,155.5	-1,439.50	30.0	-200.0	202.2	0.00	0.00	0.00
5,200.0	0.00	0.00	5,183.8	-1,467.81	30.0	-200.0	202.2	0.00	0.00	0.00
5,300.0	0.00	0.00	5,283.8	-1,567.81	30.0	-200.0	202.2	0.00	0.00	0.00
PROPOSED TD										
5,377.7	0.00	0.00	5,361.5	-1,645.50	30.0	-200.0	202.2	0.00	0.00	0.00

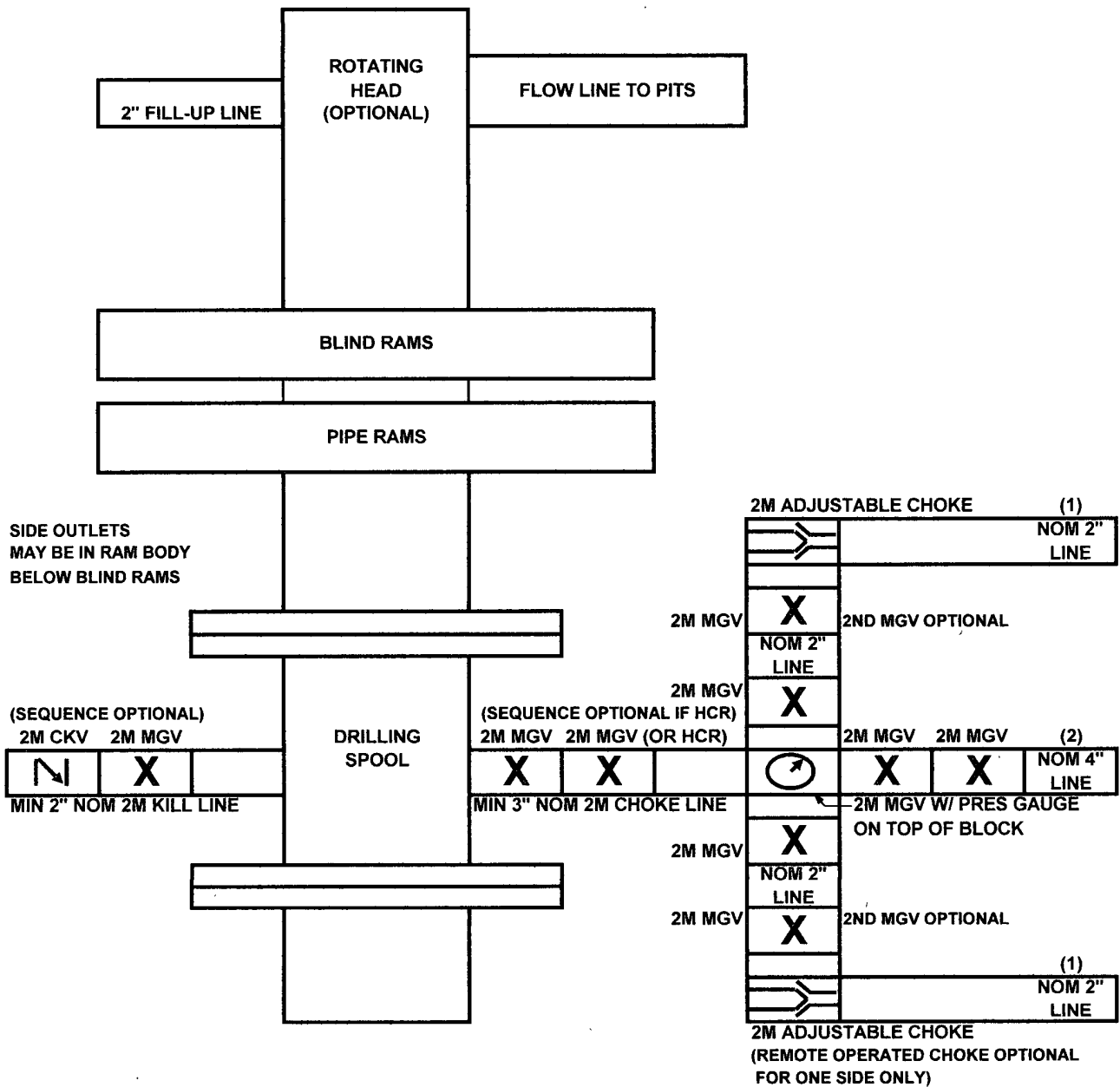
Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
959.1	956.5	7 RIVERS		0.00	
1,541.8	1,528.5	QUEEN		0.00	
1,938.5	1,922.5	GRAYBURG		0.00	
2,177.7	2,161.5	PREMIER SAND		0.00	
2,253.7	2,237.5	SAN ANDREAS		0.00	
3,648.7	3,632.5	GLORIETA		0.00	
3,738.7	3,722.5	UPPER YESO		0.00	
5,171.7	5,155.5	TUBB		0.00	

Plan Annotations

MD (usft)	TVD (usft)	+N-S (usft)	+E-W (usft)	Comment
575.0	575.0	0.0	0.0	KOP (3°/100ft BUR)
945.8	943.5	5.3	-35.5	END OF BUILD TO 11.12° INC
1,436.1	1,424.6	19.4	-129.0	END OF TANGENT
2,177.7	2,161.5	30.0	-200.0	END OF DROP TO VERTICAL
5,377.7	5,361.5	30.0	-200.0	PROPOSED TD

2M BOP SCHEMATIC



(1) Line to mud gas separator and/or pit

(2) Bleed line to pit

MGV - Manual Gate Valve

CKV - Check Valve

HCR - Hydraulically Controlled Remote Valve

HYDROGEN SULFIDE (H₂S) CONTINGENCY PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H₂S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
 - Detection of H₂S, and
 - Measures for protection against the gas,
 - Equipment used for protection and emergency response.

Ignition of Gas source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Lime Rock Resources personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Lime Rock Resources response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

H₂S CONTINGENCY PLAN EMERGENCY CONTACTS

Company Office –Lime Rock Resources 713-292-9510
Answering Service (During Non-Office Hours) 713-292-9555

Key Personnel

Name	Title	Phone Number
Richard Ghiselin.	Production Engineer	713-345-2136 Cell: 218-507-0386
Mike Barrett	Production Supervisor	575-623-8424 Cell: 505-353-2644

Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	575-746-2701
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283

Carlsbad

Ambulance	911
State Police	575-8885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-887-6544
US Bureau of Land Management	575-887-6544

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
24 Hour	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635
National Emergency Response Center (Washington, DC)	800-424-8802

Other

Boots & Coots IWC	800-256-9688 or 281-931-8884
Cudd PressureControl	915-699-0139 or 915-563-3356
Halliburton	575-746-2757
B. J. Services	575-746-3569
Flight For Life – 4000 24 th St. Lubbock, Texas	806-743-9911
Aerocare – R3, Box 49F, Lubbock, Texas	806-747-8923
Med Flight Air Amb – 2301 Yale Blvd SE #D3, Albuquerque, NM	505-842-4433
S B Air Med Service – 2505 Clark Carr Loop SE, Albuquerque, NM	505-842-4949